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CRAGIST
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CRAGIST: Cedar Rapids And Greater Iowa Sinclair Timex. First meeting January 19th 1986.

Meetings have been sparsely attended, overtime and company trips have interferred.

I have had a number of inquiries both by phone and by letter about various T/S questions. All prompted by CRAGIST being listed in Computer Shopper in the User's Groups. I see that Computer Shopper seems to have dropped the User's Groups in addition to having previously dropped Clasic Computers. Another magazine "Vulcan's Computer Buyer's Guide is trying to pick up where Classic Computer left off. I sent in an article to them and they called the author so apparently it will be published.

Here are the addresses:
BRET A. GAGNON; 141 North Maple St.; Florence, MA 01060
GEORGE AVENT; 909 Texas Street; Columbia, SC 29201
HARRY UFFLEMAN; 734 Woodmont Place; Shreveport, LA 7110
JOE TISCHER; P. O. Box 145; Poncha Spgs, CO 81242
MIKE LAMPKINS; 306 Sugartree Road; Piney Flats, TN 37686
PHIL BROWN; 118 Muirfield Court; Wichita, KS 67209

The following are in business, send LSASE for catalog:
LARRY ZUNK; ZUNK CUSTOM ELECTRONICS; 1419 Ferris; Waxahachie,TX 75165
BYTE-BACK CO.; Rt. 3 Box 147 Brodie Rd.; Leesville, SC 29070

Lots of action, some is rather hazy in detail, Frank Davis is using a LASER PC3 to upload to a T/S 2068 and possibly download to the T/S 2068. The LASER is a spelling checker with extra features and according to the LASER technician uses a Z80 and has 32K memory. It is an upgrade from the LASER Compumate2 which does not have the serial port. Frank's address is FRANK DAVIS; 513 E. Main; Peru, IN 46970.

I was at the Collins Disposal Store and met Garry there last month and he was frantically pawing through the tubes of I. C. s and he found a bunch of 43256-10LL SRAMs and I managed to get some from him afterwards. When I ordered mine for the Ramdisk last year I paid $105. for 4, and then last month I got 26 for $4.00. But then they could have been zapped. However the ones I bought tested good on the Ramdisk board. Now I will have to increase it to maximum size. The LL suffix means that each chip will draw 50 microamperes of current on standby, a single L would mean that they draw twice as much. I was in there last Thursday and saw a short tube of flat I. C.s and since it was $0.50 for the works I took it to see if I could figure out what they were. They were 27C64 EPROMs and 13 were J hook ones for sockets (I think) spaced at .05 inch with leads all around the little chips and 8 were surface mount. Speeds were 150 nanoseconds. The month preceeding I had found some 2764-15 or 25 or 30 EPROMs socketed on boards three to a board and the boards were a buck. If I ever get to programming EPROMs for the ZX81 I will have them to use.

If you have the Larken disk controller for the T/S 2068 and especially if it has version #3 EPROM then you will want to get Bob Swoger's AOSDOS which will reduce the number of key punches to LOAD programs on disk. It is a disk operating system and will come up running on any drive working from Ramdisk or drive 0. I am a slow man to figure out things so I can't explain it more but there is a lot of stuff there and it is on disk not in the computer memory. Bob's address is: NITE

TIME NEWS EDITOR; BOB SWOGER; 613 Parkside Circle; Streamwood, IL 60107.

Here is the program that may be published in Vulcan's Computer Buyer's Guide:

THE TRIALS AND TRIBULATIONS OF READING A MSDOS TEXT FILE DISK!

by

RICHARD MATEJOVIC

Before I begin I would like to thank Bill Miller of SINCLINK for getting me involved with this project in the first place. I would also like to thank Mark Wahl also of SINCLINK for writing the initial program that I used to get started in the right direction. All I really did was debug Mark's program.

Our story begins some time ago in a land far far away (Ohio). One day I was talking to Bill on the phone. (Much to my wife's dismay!) I was telling him that I had just gotten an AERCO disk drive system for my T/S 1000! After having had only cassette and stringy floppy this was new and wonderous for my poor little person to behold. In the course of our conversation Bill mentioned that I should try to read an MSDOS disk. He said that his system could read other disks made on other machines. So I thought sure I am game to give it a try. Well Bill sent me a disk to try. I also sent him one to try.

After playing around with this project on my own I had all but given up. By reading the AERCO manual and lots of trial and error (lots of error) I was able to determine that this was going to require some Machine Code programming skills. Since this was beyond my abilities I thought "I will call Bill and see if he can be of any help!" Well Bill wasn't but he asked Mark about it and in a matter of a few minutes he was able to pound out a short program that he thought would work. However since he had no T/S 1000 to try it on back it came to me. I typed in the program and tried it. No go nothing happened. The screen went blank and that was it. Ok, I know the drive needs to be started. So I added line "700 RAND USR 12800". Now lets RUN the program, CRASH with error code 3/1100 subscript out of range. Ok lets call Bill again. Unfortunatly he was not much help. After some more playing around with the program I changed line 1000 to "FOR K=1 TO 40". IT WORKED!!

Alright lets see what all is on this disk. After 1 sector error 3/1100 AGAIN! Ok now variable "N" needs reset so add line "1085 IF N=SEND THEN GOTO 1160". And we were off again. This time it made 9 sectors before error 3/1100 I don't know about you but I was getting tired of the same error all of the time. The least it could do is come with something new! Anyway now variable "S" needs reset so add line "1015 IF S>9 THEN LET S=1".

This brings us to where the program is today. It will still crash out with error 3/1100 when it comes across anything but text files but I am working on this problem also. In the mean time if you do use it and it crashes just type in "PRINT PEEK K;" and "PRINT PEEK S;" and avoid these areas.

If you have any questions I can be reached at the address and phone listed below. I would like to thank you for the time you have taken to read this article. And you can be sure that I will be typing away on my "little toy computer" for many years to come.

By the way if you are using a Memotech Centronics Printer Interface then you should reverse lines 940 and 960.

COLUMBUS T/S SURVIVOR
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Columbus, OH 43214

Phone #1- (614)263-0447

NOTE: The small letters in the listing are inverse letters.

```
70 PRINT
80 PRINT
90 PRINT "   WARNING  warning  WARNING"
95 PRINT
100 PRINT "   THIS PROGRAM WILL CRASH"
110 PRINT "IF YOU DO NOT SET RAM TOP BY"
120 PRINT " POKING 16389,192 THEN NEW"
130 PRINT "PRESS ENTER IF YOU HAVE DONE SO"
140 PRINT
150 PRINT
160 PRINT "TO STOP THE PRINTOUT PRESS BREAK"
170 PRINT
180 PRINT "TO STOP THE DISK DRIVE TYPE IN"
190 PRINT """RAND USR 12852"" WRITE IT DOWN"
200 INPUT Z$
700 RAND USR 12800
800 LET MCADDR=32*1024-512-11
810 LET M=MCADDR
820 REM LD HL,  $7E00
821 POKE M,33
822 POKE M+1,0
823 POKE M+2,126
830 REM LD,C $0
831 POKE M+3,14
832 POKE M+4,0
840 REM LD B,  $0
841 POKE M+5,6
842 POKE M+6,0
850 REM CALL $3300
851 POKE M+7,205
852 POKE M+8,0
853 POKE M+9,51
860 REM RET
861 POKE M+10,201
900 DIM T$(256)
905 DIM A(512)
910 FOR N=1 TO 32
920 LET T$(33 TO 47)="? ?$??,()*+,-./"
930 LET T$(48 TO 64)="0123456789:;"(=)? "
938 REM TYPE LINE BELOW THIS
939 REM IN REVERSE VIDEO
940 LET T$(65 TO 90)="abcdefghijklmnopqrstuvwxyz"
950 LET T$(91 TO 96)="????--"
960 LET T$(97 TO 122)="ABCDEFGHIJKLMNOPQRSTUVWXYZ"
970 FOR N=123 TO 256
980 LET T$(N)=" "
990 NEXT N
1000 FOR K=1 TO 40
1010 FOR S=1 TO 9
1015 IF S>9 THEN LET S=1
1020 CLS
1030 POKE (MCADDR+4),S
1040 POKE (MCADDR+6),K
1050 RAN USR MCADDR
1060 LET SSTRT=MCADDR+11
```

```
1070 LET SEND=SSTRT+512
1080 FOR N=SSTRT TO SEND
1085 IF N=SEND THEN GOTO II60
1090 LET A=PEEK (N)
1100 LPRINT T$(A);
1110 NEXT N
1160 NEXT S
1170 NEXT K
1180 STOP
```

LDOSFI.CX ZX81 Larken Fix.

When my Larken ZX81 disk controller arrived I got the 5 V D C power wired to the ZX81 controller board. But the most action I got was the drive light would come on at anytime that LDOS went to the drive but the drive motors never came on. After double checking and making sure I had the terminator resistors in place I called Larry and he said the the drive select line had to go to ground. It was a clue but not one I could use.

A call to Dan Elliott gave me the information that he had a ZX81 with LDOS running successfull a 80 track Tandon DS QD drive. But he did not have a Tandon TM100-2A manual so he was not sure what would work but he said that line 34 had to be taken to ground. And line 34 was the right most line if the disk interface of the Larken controller is facing you and the components are on the bottom. I traced the line around the board several times and there is a resistor that goes from line 34 on the top of the board and is near the ground plane. I put a jumper on the resistor where it came through the board and the other end of the jumper to the wide ground plane.

But that did not do anything that helped me. So I had to wait for replies for my requests for information. I did feel it was in the disk drive but I still could not rule out a zapped chip on the Larken controller. I put another make on the line but it also did not operate. The same power supply and Tandon drive operated successfully on the T/S 2068 Larken controller. A lot of data but nothing that gave me any help.

A letter came from Tony Farrell in Australia gave me the information to get going. Or should I say half of the information. He said to put jumpers on the disk drive select socket in the following order on socket TE: Pin 1 to Pin 16; Pin 2 to Pin 15 (I already had that done); and Pin 8 to Pin 9. Dan Elliott had suggested that I use a wire to try each group but since I was only doing one more and it needed two then I had no luck.

I put in the missing two jumpers and viola! upon power up and a command the drive came on and the report came back. And it FORMATed a disk and even LOADed a program on the disk that Tony had sent me. Now I had a working ZX81 disk drive system.

The next day I cut the jumper between #34 lead and ground and while the disk drive came on it would not read anything. So I had to solder the cut wire back in.

I supply this information so that anyone that wants to put a Tandon TM100-2A drive (DS DD, 40 track) on his ZX81 LDOS system will know that it can be done and will have the ready answers without all the head scratching I went through. The Tandon TM100-2A drives should be appearing at very cheap prices for used ones since they are used in the IBM PC and when the users upgrade to bigger capacity drives or hard disks these are no longer wanted or needed.

MANUAL?

I have three things I got from Zebra last year at the CATS FEST which I have not been successfull in finding documentation or software (if needed) for. I was promised one manual by Zebra but it never showed up and letters did not get a response even with a LSASE. I was hoping that someone would have the missing information. The items are:
ZEBRA TALKER - I have both the TS 2068 and the ZX81 models and I have the manual and the software for the TS 2068 but not for the ZX81.
ZEBRA US101 I don't even know what it is.
ZAD BOARD PC 67 REV A. Zebra promised manual but did not deliver. Is it ZX81 or T/S 2068 or both.
I will be willing to pay reasonable copy costs.
Donald S. Lambert

USING SLOW MEMORY CHIPS? HAS IT BEEN DONE? I have a question that is prompted by my being in possession of some EPROMs and also some RAM chips that may be too slow for the standard speed ZX81 or the TS 2068. I have heard that it is possible for the slower chips to be used if you use the WAIT line on the Z80 chip. Now I am aware of two possible ways of doing it, one is to put in the hardware to give the computer an extra cycle before checking to see if the RAM or EPROM has the memory bit ready. The other is to use hardware to have the Z80 WAIT until the memory chip responds with the idea that it will not slow the computer down since it is likely that the computer will not be ready to accept data yet from the memory.

I am woefully limited in my knowledge in computer circuits and hardwaring and I do not want to reinvent the wheel if I can prevent it. Has anyone ever used the WAIT line on the Z80 or had a scheme that worked to allow a slower speed memory chip to be used? I would prefer to do the work on a ZX81 but circuitry for a T/S 2068 just might work on the ZX81. I have a book on interfacing the Z80 chip to the outside world and it has a circuit that is supposed to put two clock cycles in before picking up the bit from the memory chips. I would be willing to share ideas and help to work this into a usable idea. I have something like 135 2716 G EPROMs which I believe are 450 ns chips and they have to be 400 ns or better (after removal from the boards with a mortality rate of 11.11% that would be about 118 good chips according to a sample of 9 chips). I plan to use them on the ZX81 with a PROM burner/reader board I recently acquired.

LKDOS User.

This is a little program that I finally got working from hints that George Chambers gave me when I was compaining about the way that the directory printed out when you had the CAT go to the printer. Load this program into the computer and set the computer for the disk drive you want to use and then enter RUN and when you hit ENTER the disk drive will operate and then your full sized printer (you did remember to turn it on, if you didn't then it will wait till you do) will come on and print out the directory down the page leaving plenty of room on the right hand side of the file name for you to write comments. If you want to change the program to print differently, line 100 sets the left margin and line 200 sets the program length. This program will work with an AERCO printer interface and an Okidata 82A printer and I don't know about any other printers or interfaces.

I have entered what the printed out directory will look like following the program:

```
100 RANDOMIZE USR 100: POKE 16090,15
200 RANDOMIZE USR 100: POKE 16094,10
```

```
300 RANDOMIZE USR 100: OPEN #2,"LP"
400 RANDOMIZE USR 100: CAT "",
```

You will notice that the printer will not run the paper to the start of the next page.

```
Disk Name :   RA  (this line actually starts at the far left Margin)
M-DISK


mscrip.BA    001
mscrip.CM    002
TWII.BT      002
twc.Ct       003
cattab.B1    001
letter.C1    002
george.C1    001
LDOSFI.CX    001



LARKEN LKDOS 198
6
TRACK/SIDE  012/
002
Total Files 008
Free Blocks 010
```

Submitted by:
Donald S. Lambert

KITE-COMPUTER-CAMERAKITE PROJECT.

There is progress on Mike LeDuc's development board for the ZX81. What has happened was that the prototype was changed several times and what we are working on is a step up avoiding some problems and also some improvements but we are maintaining the manually controlled bank switching concept. I plan to build one to test the sketches we are working on. It will not be too highly detailed but should have enough material that anyone familiar with handling the SRAM chips should have no problems. Also, Garry Young will have imput since he would do it a little differently. Basically, a 43256 SRAM chip has the 32K of memory divided up into four banks of 8K. Lots of memory for the 8K to 16K area with one chip.

DISK MESS.

When I ordered my Larken T/S 2068 disk controller boards I started to stock up on disks when on sale, I ended up with 10 boxes (50 disks) and later I ordered from MEI Micro two orders of 100 bulk disks and then a little while back I realised that I had only 50 unformated disks plus another 25 formatted for the ZX81 Larken. 250 minus 75 is 175 and if I only had 10 programs on a disk that would be 1750 programs and I knew that wasn't right. I don't think I have over 400 programs so something was wrong. So I LOADed cattab and ran it on all disks and I was surprised to find so many disks had just a file or two on them, so if I sort out the files to categories and have disks designated to certain things then I should really free up a lot of disks and not have to buy any nor the storage cases for them. I even bought a bundle of 50 disks this weekend at a computer show.